CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

WATERSHED MANAGEMENT INITIATIVE
STRATEGIC PLANNING CHAPTER

Updated June 2003

Prepared by:
Regional Board Staff

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

OVERVIEW

The water resource protection efforts of the State Water Resources Control Board and the Regional Water Quality Control Boards are guided by a five year Strategic Plan (updated in 2001). A key component of the Strategic Plan is a watershed management approach for water resources protection.

To protect water resources within a watershed context, a mix of point and nonpoint source discharges, ground and surface water interactions, and water quality/water quantity relationship issues must be considered. These complex issues present considerable challenges to water resource protection programs. The State and Regional Boards are responding to these challenges with the Watershed Management Initiative (WMI). The WMI focuses limited resources on key issues, and integrates surface and ground water regulatory programs to promote cooperative and collaborative efforts within watersheds.

The water resources protection strategy used previously by the State and Regional Board were directed at solving site-specific problems. This approach was effective for controlling point source pollution. However, a different strategy was necessary to address pollutants from diffuse, nonpoint sources. The WMI strategy draws solutions from all interested parties within a watershed, to collectively coordinate and implement measures to control point and nonpoint sources of pollution.

Implementation of the WMI requires each Regional Board to identify the watersheds in their Region, prioritize water quality issues, and develop watershed management strategies to achieve the highest level of protection. These strategies and the State Board's WMI approach are provided in the Integrated Plan for Implementation of the WMI.

REGION DESCRIPTION

The Colorado River Basin Region covers approximately 13 million acres (20,000 square miles) in southeast corner of California, and includes all of the Imperial County, and portions of San Bernardino, Riverside, and San Diego Counties. The Region is bordered to the east by the Colorado River; to the south by the Republic of Mexico; to the west by the Laguna, San Jacinto, and San Bernardino Mountains and to the north by New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain Ranges. The Region includes 28 major watersheds or "hydrologic units", and has water bodies of statewide, national, and international significance (e.g. the Salton Sea and the Colorado River).

Watershed Delineation

The Region can be divided into three sub-regional watershed management areas: the Lower Colorado River Watershed, the Salton Sea Transboundary Watershed, and the Desert Aquifers Watershed. Major surface water bodies geographically define the Lower Colorado River Watershed and Salton Sea Transboundary Watershed. The Desert Aquifers Watershed has little surface water and hundreds of aquifers

The Salton Sea Transboundary Watershed is the priority watershed for Region 7 and contains five of the six impaired surface water bodies in the Region's 303(d) list.

ORGANIZATION STRUCTURE AND MANAGEMENT STRATEGY

Organization Structure

Region 7 staff are organized into two divisions: Core Regulatory and Watershed Protection. Core Regulatory carry out programmatic commitments for compliance and enforcement, while the Watershed Protection Branch addresses planning and nonpoint source issues.

Core Regulatory Programs

Core regulatory programs include: Chapter 15 and Non-Chapter 15 discharges of waste to land; Department of Defense; National Pollutant Discharge Elimination System (NPDES); Above Ground Storage Tanks; Underground Storage Tanks, and Stormwater. These core regulatory programs, with strong compliance and enforcement components, are the backbone of effective water quality protection and pollution prevention, and are essential to fulfilling the RWQCB's legislative mandates. These programs are tied to specific fund sources, with explicit state, federal, regulatory and legislative mandates. Activities conducted are prioritized by individual program commitments.

Watershed Protection Programs

The Watershed Protection Branch includes several programs: Water Quality Policy (e.g. Basin Plan Amendments and Triennial Reviews); Nonpoint Source (NPS) Management; Total Maximum Daily Load (TMDL) development and implementation; Border Pollution and the New River/Mexicali Sanitation Program; technical support services; Clean Water Act (CWA) Sections 305(b) (water body assessment) and 303(d) (listing of impaired water bodies), and Surface Water Quality Monitoring.

Management Strategy

Point Source

Point source pollution is effectively controlled through the issuance and enforcement of waste discharge requirements. Section 402 of the Clean Water Act (CWA) requires National Pollutant Discharge Elimination System (NPDES) permits for all point source discharges of pollutants to waters of the U.S. (lakes, rivers, wetlands, etc.). Exceptions include: return flows from irrigated agriculture; runoff from agricultural croplands and forestlands, and certain point source storm water discharges. The discharge of dredge and fill materials to waters of the United States are subject to permits pursuant to Section 401 (issued by the Regional Board) and 404 of the CWA (U.S. Army Corp of Engineers), and not the NPDES program. The USEPA has approved the State's program to issue NPDES permits pursuant to Section 402 of the Clean Water Act (CWA) and Section 13370 of the California Water Code.

Nonpoint Source

The primary nonpoint source pollutants in Region 7 are from agriculture, Mexico, septic tanks/leach fields, and fertilization of golf courses/greenbelts. Watershed management activities in Region 7 are interrelated, given that the majority of pollutants impairing beneficial uses are from these nonpoint sources (e.g. TMDL development and NPS management). Staff is working within watersheds to implement the State Nonpoint Source Management Plan, develop TMDLs for listed pollutants, and strategize with stakeholders to implement Best Management Practices (BMPs). Clean Water Act NPS pass-through grant projects and Proposition 13 pass-through grant projects are solicited and managed by the Watershed Protection Branch to encourage public education and self determined solutions to NPS pollution. A significant strategy for addressing water body impairment in the International Boundary area is accomplished through the New River/Mexicali Sanitation Program. All these activities fall outside the traditional core regulatory framework, and require innovative solutions for solving complex problems. Additional resources will be requested to resolve water quality problems currently not addressed or addressed inadequately.

Protection of High Quality Ground Water

The Coachella Valley aquifer supplies high quality drinking water to virtually all of the valley's rapidly growing population. Similarly, the availability of good quality ground water is important in the development of other areas such as Desert Hot Springs, Borrego Springs, Morongo Valley, Twentynine Palms, Joshua Tree, Yucca Valley, Lucerne Valley, and Desert Center. Nitrate concentrations in ground water exceed drinking water standards in some of these areas, causing temporary or permanent closure of several municipal supply wells. Protecting these drinking water sources from point and nonpoint source pollutants is as important as restoring impaired surface waters. In the future staff will prepare Basin Plan amendments to increase protection of these waters.

PROGRAMS COVERED UNDER WMI

Nonpoint Source Management Program

Nonpoint sources of water pollution are diffuse and not subject to regulation under the Federal NPDES (for surface water discharges). Regional Board staff implement the State's "Plan for California's Nonpoint Source Management Program" and develop/implement Total Maximum Daily Loads for the control of NPS pollution.

Total Maximum Daily Load (TMDL) Program

The current focus of WMI implementation is the Total Maximum Daily Load (TMDL) process. Section 303(d) of the Clean Water Act (CWA) requires that the State Board identify waters in the Region that do

not comply with water quality standards. In addition, the State Board must rank the impaired water bodies taking into account the severity of the pollution and the beneficial uses. The State shall establish TMDLs for pollutants causing the impairments to ensure these waters attain their beneficial uses. Impaired waterbodies in Region 7, extent of impairment, pollutants causing impairment and time schedule for TMDL development are shown in Table 1.

Regional Board staff proposes the following TMDL activities for SFY 03-04:

- Implementation of the Alamo River Sediment TMDL
- Implementation of the New River Sediment TMDL
- Development of the New River Trash TMDL
- Development of the New River Dissolved Oxygen TMDL
- Development of the Salton Sea Nutrient TMDL
- Implementation of the New River Pathogen TMDL
- Development of Sediment TMDLs for the Imperial Valley Agricultural Drains
- Development of the Palo Verde Pathogen TMDL
- Development of the Coachella Valley Stormwater Channel Pathogen TMDL
- Development of New River Nutrient TMDL
- Impairment assessment of soluble pesticide TMDLs for the Alamo River

New River/International Boundary

The New River receives urban runoff, untreated and partially treated municipal wastes, untreated and partially treated industrial wastes, and agricultural runoff from Mexicali Valley. The River also receives urban runoff, agricultural runoff, treated industrial wastes, and treated disinfected and non-disinfected domestic wastes from Imperial Valley.

Staff implements the New River/Mexicali Sanitation Program, which includes monthly observation tours of discharge locations and wastewater facilities in the City of Mexicali, Mexico; monthly 8-hour monitoring, and quarterly 24-hour monitoring of the New River at the International Boundary; coordination with the U.S. Section of the International Boundary and Water Commission (IBWC); technical reviews of documents, plans and reports; and participation on the binational committee to address New River border pollution issues. The Regional Board adopted a pathogen TMDL for the New River in October 2001, State Board approved in March 2002, Office of Administrative Law in May 2002, and USEPA in August 2002. The TMDL is expressed in terms of bacterial densities. High levels of fecal coliform bacteria (> 100,000 MPN/100 ml) are repeatedly detected in the New River at the International Boundary. The concentrations exceed the 60,000 MPN/100 ml water quality objective (WQO) established in the Basin Plan for the border.

Geographical Information Systems (GIS)

A GIS is an organized collection of computer hardware, software, geographic data, and personnel designed to efficiently and effectively capture, store, update, manipulate, analyze, and display all forms of geographically referenced information. Regional Board staff is establishing the GIS to support basin planning activities, watershed management, development and implementation of TMDLs, and underground storage tanks.

Pass-Through Grants

Regional Board staff work to solicit, develop, and manage pass-through grant for projects that improve water quality, augment planning efforts, and provide public education and outreach. These grants include

the Federal Clean Water Act Sections 205(j) (planning) and 319(h) (implementation), and State Proposition 13.

Stakeholder Involvement

Stakeholder involvement is a cornerstone of the Watershed Management approach. It requires a commitment of active participation for extended periods of time. Stakeholder involvement assures local control and public participation, and a water quality management approach that is cognizant of stakeholder issues. The Regional Board has been very successful in efforts to involve and motivate a wide range of stakeholders.

Table 1. CRWQCB-CRBR 2002 303(d) List
Timeline for Development of Total Maximum Daily Loads (TMDLs)[1]

WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFFECTED	PROBLEM DESCRIPTION	POLLUTANT/STRESSOR	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE(S)
New River	723.10	60 miles	Basin Plan Objectives violated, public health hazard	Pathogens	Mexico and Wastewater Treatment Plants in Imperial County	High	Started 1998, completed 2001
			Basin Plan Objectives violated, recreational impacts	Silt	Imperial Valley agricultural return flows	High	Started 1998, complete 2002
			Elevated fish tissue levels, fish kills	Pesticides[4]	Imperial Valley agricultural return flows and Mexico	High	Start 2005, complete 2011
			Basin Plan Objectives violated, fish kills	Dissolved Organic Matter/Dissolved Oxygen	Mexico	High	Start 2003, complete 2006
			Basin Plan Objectives violated, Public health hazard	Trash	Mexico	High	Start 2004, complete 2007
			Basin Plan Objectives violated[2]	Chloroform	Mexico	High	Start 2007, complete 2011
			Basin Plan Objectives violated[2]	Toluene	Mexico	High	Start 2007, complete 2011
			Basin Plan Objectives violated[2]	p-Cymene	Mexico	High	Start 2006, complete 2009
			Basin Plan Objectives violated[2]	1,2,4-trimethylbenzene	Mexico	High	Start 2006, complete 2009
			Basin Plan Objectives violated[2]	M,p,-Xylene	Mexico	High	Start 2005, complete 2008
			Basin Plan Objectives violated[2]	o-Xylenes	Mexico	High	Start 2005, complete 2008
			Basin Plan Objectives violated[2]	Nutrients	Mexico	High	Start 2005, complete 2008
			Basin Plan Objectives violated[2]	p-DCB	Mexico	High	Start 2006, complete 2010

1. (See footnotes on page 3)

WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFFECTED	PROBLEM DESCRIPTION	POLLUTANT/STRESSOR	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE(S)
Alamo River	723.10	52 miles	Basin Plan Objectives violated, recreational impacts	Silt	Imperial Valley agricultural return flows	High	Started 1998, completed 2001
			Elevated fish tissue levels, toxic bioassay results	Pesticides[4]	Imperial Valley agricultural return flows	High	Start 2005, complete 2011
			Elevated fish tissue levels	Selenium[3]	Imperial Valley agricultural return flows	High	Start 2005, complete 2010
Imperial Valley Drains	723.10	1,305 miles	Basin Plan Objectives violated, recreational impacts	Silt	Imperial Valley agricultural return flows	High	Start 2001, complete 2004
			Elevated fish tissue levels, toxic bioassay results	Pesticides[4]	Imperial Valley agricultural return flows	High	Start 2005, complete 2011
			Elevated fish tissue levels	Selenium[3]	Imperial Valley agricultural return flows	High	Start 2003, complete 2010
Salton Sea	728.00	220,000 acres	Basin Plan Objectives violated, recreational impacts	Nutrients	Agricultural return flows, NPDES Wastewater Treatment Plants, Mexico	High	Start 2001 complete 2004
			Basin Plan Objectives violated	Salts[5]	Agricultural return flows, NPDES Wastewater Treatment Plants, Mexico	High	
			Elevated fish tissue levels	Selenium[3]	Agricultural return flows	Medium	Start 2005, complete 2010

WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFFECTED	PROBLEM DESCRIPTION	POLLUTANT/STRESSOR	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE(S)
Palo Verde Outfall Drain	715.40	16 miles	Basin Plan Objectives violated, public health hazard	Pathogens	Unknown	Medium	Start 2001, complete 2003
Coachella Valley Storm water Channel	719.47	20 miles	Basin Plan Objectives violated, threat of toxic bioassay results	Pathogens	Unknown	Low	Start 2002, complete 2005

1. This is not a commitment to complete work. The commitments are made in fund source specific workplans.
2. Current Regional Board's monitoring data for the New River at the International Boundary shows that VOCs are routinely present in the New River immediately downstream from the International Boundary with Mexico, at concentrations that violate Basin Plan objectives. However, data collected by USBOR near the New River-Salton Sea Delta in 1999 and briefly presented at the January 13-14, 2000 Salton Sea Symposium found that VOCs in the New River not to be of major concern. Therefore, it is believed that the VOC impairment may not affect the 60-mile stretch of the New River in the USA. Additional data is necessary to characterize the impacted river segment.
3. Selenium originates from upper portion of the Colorado River and is delivered to the Imperial Valley via irrigation water; Selenium will likely be addressed via a federal TMDL for the entire Colorado River Watershed.
4. May be effectively addressed by Silt TMDL, thus not requiring new TMDL development.
5. TMDL development will not be effective in addressing this problem, which will require an engineered solution with federal, state, and local cooperation.

KEY ISSUES IN THE COLORADO RIVER BASIN REGION

SURFACE WATER QUALITY CONCERNS

A. Identified Problems

The most significant surface water quality problems in the priority watershed (Salton Sea Transboundary Watershed) occur in the Salton Sea, the New and Alamo Rivers (tributaries to the Salton Sea), and the Imperial Valley Agricultural Drains. Nonpoint source pollutants have seriously impaired these major surface water bodies for several years. With the exception of pollutants introduced from Mexico to the New and Alamo Rivers, NPS pollution from agricultural practices in Imperial Valley is the primary source of pollution in this watershed.

The Colorado River supplies drinking water to millions of Southern Californians. A segment of the Lower Colorado River is impaired by pathogens on a seasonal basis. Septic systems in resort parks along the river appear to be the source of pathogens. Communities along the Colorado River representing three states and two Indian tribes have formed a coalition to address the problem. The Regional Board does not have regulatory authority on Indian lands, however staff assist this stakeholder group by providing technical advice and regulatory guidance.

In August 1999 the U.S. Fish and Wildlife Service discovered Giant Salvinia in the Colorado River, and in drains near Blythe owned by the Palo Verde Irrigation District (PVID). Giant Salvinia is a free-floating aquatic fern native to South America that grows rapidly, covering the surface of lakes and streams. In an attempt to control and eradicate Giant Salvinia, barriers were placed in channels and drains, herbicides applied, and PVID's West Side Drain cleared. These efforts were not entirely successful but afforded some control.

The U.S. Bureau of Reclamation proposed an Interagency Memorandum of Understanding for the control and eradication of Giant Salvinia in the Lower Colorado River. Task Force meetings are regularly scheduled and attended by Regional Board staff.

The Palo Verde Valley is an agricultural area located in the Lower Colorado River Watershed**.** The Palo Verde Outfall Drain is on the 2002 303(d) List for impairment caused by bacteria of unknown origin.

B. Potential Issues For Further Investigation

The following issues are recommended for further study:

- The occurrence of pathogens in the Lower Colorado River
- The occurrence of perchlorate in the Lower Colorado River
- The occurrence of selenium in the Lower Colorado River
- The occurrence of chromium 6 in the Lower Colorado River
- The effect of water transfers on water quality in the Lower Colorado River

GROUND WATER QUALITY CONCERNS

On Site Treatment Systems

High quality ground water is a precious commodity in the Colorado Desert, and warrants the highest protection. Rapid population growth is impacting ground water quality and quantity. On-site treatment systems like septic tanks and leach fields, cause significant ground water pollution in Region 7,

particularly in Desert Hot Springs, Lucerne Valley, and Coachella Valley. The potential impact these disposal systems have on drinking water quality include increases in:

- total dissolved solids
- chlorides
- nitrates

This is a serious concern given the importance of drinking water aquifers in desert climates, and the cost associated with ground water remediation.

Leaking Underground Storage Tanks (USTs) Region-wide

Leaking USTs used for storing petroleum hydrocarbons contribute significant ground water pollution in Region 7, particularly in Coachella Valley (located within the priority watershed), and the City of Blythe. These areas have porous, permeable soils that allow pollutants to easily migrate to ground water. The gasoline oxygenate Methyl tertiary-butyl ether (MTBE) is a major problem in some areas, given its persistence, mobility in the aqueous phase, and widespread use. Water districts in Coachella Valley have abandoned, or temporarily closed several drinking water wells because of MTBE pollution. This is a serious concern considering the Coachella Ground Water Basin is the sole drinking water source for this highly populated area.

RESOURCES

FUNDED ACTIVITIES (WMI related)

A. TMDLs

Funded activities are provided in the State Fiscal Year (SFY) 2003-2004 TMDL Development and Implementation State and Federal Work Plans, and Nonpoint Source Implementation Work Plan for Region 7. These activities include:

- Development of a nutrient TMDL for the Salton Sea and New River;
- Development of pathogen TMDLs for Palo Verde Outfall Drain and Coachella Valley Storm Water Channel;
- Development of sediment/silt TMDLs for Imperial Valley Drains;
- Water quality monitoring to assess TMDL implementation for the New River Pathogen and Alamo River sediment/silt;
- Development of trash and dissolved oxygen TMDLs for the New River;
- Public education and stakeholder support activities, and;
- Tracking/surveying implementation of Best Management Practices (BMPs) for target pollutant reduction.

Funds are also allocated for basin planning issues (e.g. amendments, or reviews). State funds for contracts and staff were allocated for development of implementation plans for TMDLs completed this state fiscal year (SFY).

B. Surface Water Quality Monitoring.

Water quality monitoring is a key activity in the State Water Resources Control Board (SWRCB) Strategic Plan, and SWRCB NPS Management Program. Monitoring data fulfill the Federal CWA 305(b) water body assessment requirements, establish baseline data for TMDL development, and assess efforts to

address water pollution. Region 7 has received funding for water quality monitoring, but has been eliminated due to budget cuts for SFY 2003-2004.

UNFUNDED ACTIVITIES

A. Surface Water Quality Monitoring

Several significant water quality monitoring activities are unfunded in Region 7, including monitoring the Colorado River. The USGS has several monitoring stations on the Colorado that are not in use. Region 7 plans to initiate monitoring at these sites to track water quality in the Colorado River, and in lakes along the river, that provide critical habitat for wildlife. Five persons per year (PYs) is estimated for this unfunded activity.

B. Ground Water Protection

Ground water protection funds are virtually nonexistent in Region 7. The Regional Board directed staff to refine beneficial use designations for ground water using available data in the 2001 Triennial Review. Refining ground water beneficial uses will assist the Regional Board in developing protection and abatement strategies for ground water resources. Two PYs is estimated for this unfunded activity.

C. Development of Ground Water Standards

The Regional Board identified developing water quality objectives for nitrates and total dissolved solids in ground water, a priority issue in the 2001 Triennial Review. This work is essential in the Board's efforts to address ground water pollution, provides a numerical benchmark for assessing ground water resources, and facilitates developing waste discharge requirements. Two PYs is estimated for this unfunded activity.

D. MTBE

Regional Board staff is responsible for disseminating information regarding local MTBE pollution to stakeholder government agencies. The responsible parties submit quarterly reports to the Regional Board, and results are forwarded to stakeholder agencies. This process provides the current status of remedial efforts and MTBE impacts at contaminated sites. Two PYs is estimated for this activity.

E. Septic Tank Leach Field Disposal Systems and Implementation of SB 1852 and AB 358

The Regional Board identified development of a new policy for septic tanks and leach fields a priority issue in the 2001 Triennial Review. Senate Bill 1852 requires the Regional Board to prohibit the discharge of wastewater from existing or new septic systems on parcels less than 1/2 acre, that overlie the Mission Creek and Desert Hot Springs aquifers, provided sewer hook-ups are available within 200 feet. Assembly Bill 358, signed into law in 2001, requires the Regional Board to amend the Basin Plan to prohibit subsurface discharges from septic systems in Cathedral City Cove. Enforcement of these bills will impose a serious financial burden on Region 7. Two PYs is estimated to initiate implementing these activities.

For MORE INFORMATION

Internet Information

The Colorado River Basin Regional Water Quality Control Board's website for Watershed Management Initiative activities is: http://www.swrcb.ca.gov/~rwqcb7/wmi

Basin Plan Availability

The Water Quality Control Plan (Basin Plan) for the Colorado River Basin Region is available as an Adobe Acrobat document on the Internet at http://www.swrcb.ca.gov/~rwqcb7/documents/r7bplan.pdf. Hard copies can be purchased for $25, payable to "RWQCB – Region 7", at the address below. The Basin Plan is available for review at the Regional Board office during normal business hours (excluding government holidays) at the address below.

Staff Assistance and Information

For more information regarding the Watershed Management Initiative in Region 7, please contact Teresa Gonzales at (760) 776-8931.

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260